

# FINAL TECHNICAL REPORT / RAPPORT TECHNIQUE FINAL

## ANNEX 15A - GLOBAL AQUACULTURE WORKSHOP

### ORAL PRESENTATION BY HOU KROEUN

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IDRC Grant / Subvention du CRDI: 107982-001-Scale Up of Homestead Food Production for Improved Nutrition in Cambodia (CIFSRF Phase 2)



## FOOD PRODUCTION DIVERSIFICATION AS AN APPROACH TO NUTRITION-SENSITIVE AGRICULTURE: LESSONS LEARNED FROM CAMBODIA

Hou Kroeun,  
Deputy Country Director,  
Helen Keller International - Cambodia



# Presentation outline

- What are current problems?
- What are practical solutions?
- What are results of program interventions?
- What are lessons we have learned?





# WHAT ARE THE PROBLEMS?

- Undernutrition remains a problem in Cambodia, with 1 in 3 children (32%) under five years old stunted.
- Poor households subsist on diets consisting mainly of rice which are low in protein, fat, and essential micronutrients.
- Animal source foods make up 9% of total energy intake.
- 48% of women meet minimum dietary diversity. 30% children meet MAD.

*Sources: CDHS 2014, FAO 2012, HKI 2014*



# SUSTAINABLE SOLUTION TO ADDRESS PROBLEMS - ENHANCED HOMESTEAD FOOD PRODUCTION (EHFP)



HKI has developed, tested, refined and scaled up an **integrated food production and nutrition behavior change program**, in collaboration with private sector, government actors and communities.





# NUTRIENT RECYCLING OF EHFP

## EHFP – An integrated animal-horticulture system



# ENHANCED HOMESTEAD FOOD PRODUCTION (EHFP)

## – How do we do it?



- Targeting of participant households, starting with community meetings to provide clear information of responsibilities and potential benefits.
- **Training** of Village Model Farm owners and households on management and production techniques for vegetables, fruit, chicken, and fish
- **Supply of production inputs, with cost sharing approach:** seeds, fingerlings, gardening tools, chickens
- Follow up **mentoring and training** through regular household visits
- **Monitoring/follow up** to ensure program quality





# NUTRITION BEHAVIOR CHANGE COMMUNICATION

– How do we do it?



- Focus on first 1000 days, using Essential Nutrition Actions (ENA) framework
- Training of Trainers, Village Health Volunteers and target households (including cooking demonstrations)
- Conduct small group and one on one counseling (VHVs to mother and caretaker)
- Conduct bi-monthly group meetings to discuss nutrition and gender equitable practices



# AQUACULTURE AT HOUSEHOLD LEVEL

## – How do we support it?



- 1,200 household aquaculture ponds have been supported
- Provide technical support for pond construction, but households pay the full cost of excavation/construction
- Provide training on fish production techniques
- Provide large-fish fingerlings. Households agree to stock ponds with small fish.
- Thousands of other households in targeted provinces are benefiting from access to high quality fingerlings from HKI/FIA supported local hatcheries

# SMALL SCALE FISH HATCHARIES

– How do we develop these service providers as a sustainable local source of fish fingerlings?



- 10 hatcheries have been established, and have sold millions of fingerlings in their catchment areas
- HKI and FIA to provide technical support for hatchery establishment and fish seed/fingerling production
- Project contributes 30% towards construction costs
- Hatchery repays project in-kind by supplying fingerlings to the project households in year 1
- Hatchery owners provide ongoing technical support to local small pond owners, to build their market



# WHAT TYPE OF FISH SPECIES ARE PROMOTED?



## Large species

Silver Barb (60%)



Roho (10%)



Mrigal (10%)



Common Carp (10%)



Tilapia (10%)



## Small species

*Esomus metallicus*



*Amblypharyngodon chulabhornae*



*Trichopsis vittata*



Type of fish	Nutrient contain	
	Fe (Ug/100 g)	Zn (Ug/100 g)
Esomus metallicus (small)	72.65	29.1
Amblypharyngodon (small)	175.24	25.68
Trichopsis vittata (small)	17.62	25.45
Silver Barb (large)	4.08	9.93
Roho (large)	4.25	10.2
Mrigal (large)	6.36	10.49



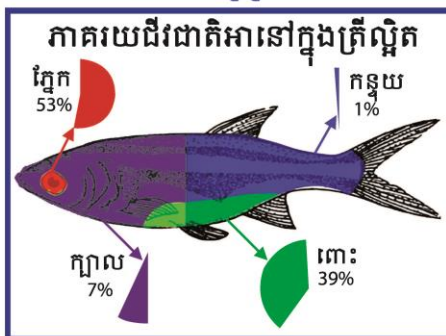
# TOOL USED TO CREATE DEMAND FOR INCREASED SMALL FISH CONSUMPTION



## ផលប្រយោជន៍ និងរបៀបចម្អិន

### សារជាតិចិញ្ចឹមនៅក្នុងត្រីល្អិតមាន៖

- ប្រូតេអ៊ីន : ជួយឱ្យរាងកាយលូតលាស់ល្អ
- កាល់ស្យូម : ជួយឱ្យឆ្អឹងរឹងមាំ
- ជីវជាតិអា : ការពារជំងឺខ្វាក់មាន់
- ស័ង្កសី : បង្កើនប្រព័ន្ធការពាររាងកាយ
- ជាតិដែក : ការពាររោគាស្មៅក្រហម



### របៀបចម្អិនត្រីល្អិត

- ចម្អិនត្រីល្អិតទាំងមូល
- មិនត្រូវកាត់ក្បាលចោលទេ
- ចម្អិនត្រីល្អិតជាមួយប្រេងឆាឬខ្លាញ់ដើម្បីឱ្យរាងកាយបឺតស្របសារជាតិចិញ្ចឹមបានល្អ

### របៀបចម្អិនទី១

១.លាងសម្អាតត្រីល្អិត



៣. ឫសសម្លដាក់ចាន



២. ដាក់ត្រីល្អិតចូលឆ្នាំងសម្ល



៤. បរិភោគ

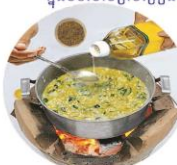


### របៀបចម្អិនទី២

១. បំពងត្រីល្អិតឱ្យឆ្អិនល្អ



៣. ដាក់ត្រីល្អិតម៉ត់និងប្រេងឆា ក្នុងបរិក្ខារបំពងឆ្នាំង



២. បុកត្រីល្អិតបំពងឆ្អិនឱ្យម៉ត់



៤. បញ្ចុកកុមារ

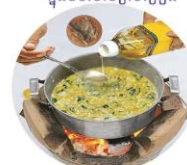


### របៀបចម្អិនទី៣

១. លាងសម្អាតត្រីល្អិត



៣. ដាក់ត្រីល្អិតចំប្រាំងម៉ត់និងប្រេងឆា ក្នុងបរិក្ខារបំពងឆ្នាំង



២. ចិញ្ចាតត្រីល្អិតឱ្យម៉ត់



៤. បញ្ចុកកុមារ



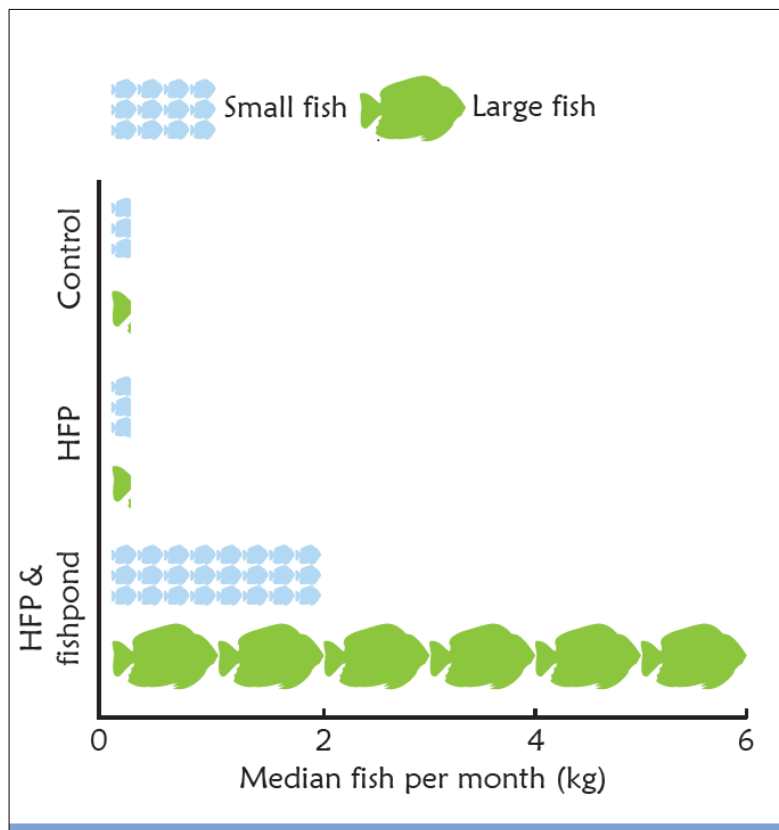
# RESULTS FROM THE EHFP PROGRAM



Item	Baseline	Endline	Sources
Average number of varieties of vegetables produced in the last 2 months	4	10	EHFP 2014-2016
Average amount of vegetables produced in last 2 months (kg)	29	56	EHFP 2014-2017
Amount of fruit produced in the last 2 months (kg)	17	20	EHFP 2014-2016
Average number of chickens owned in the last 2 months (head)	20	35	EHFP 2014-2016
Average number of eggs produced in the last two months (number)	20	30	EHFP 2014-2016
Average amount of income earned from the sale of surplus products in the 2 months	\$19	\$48	EHFP 2014-2017

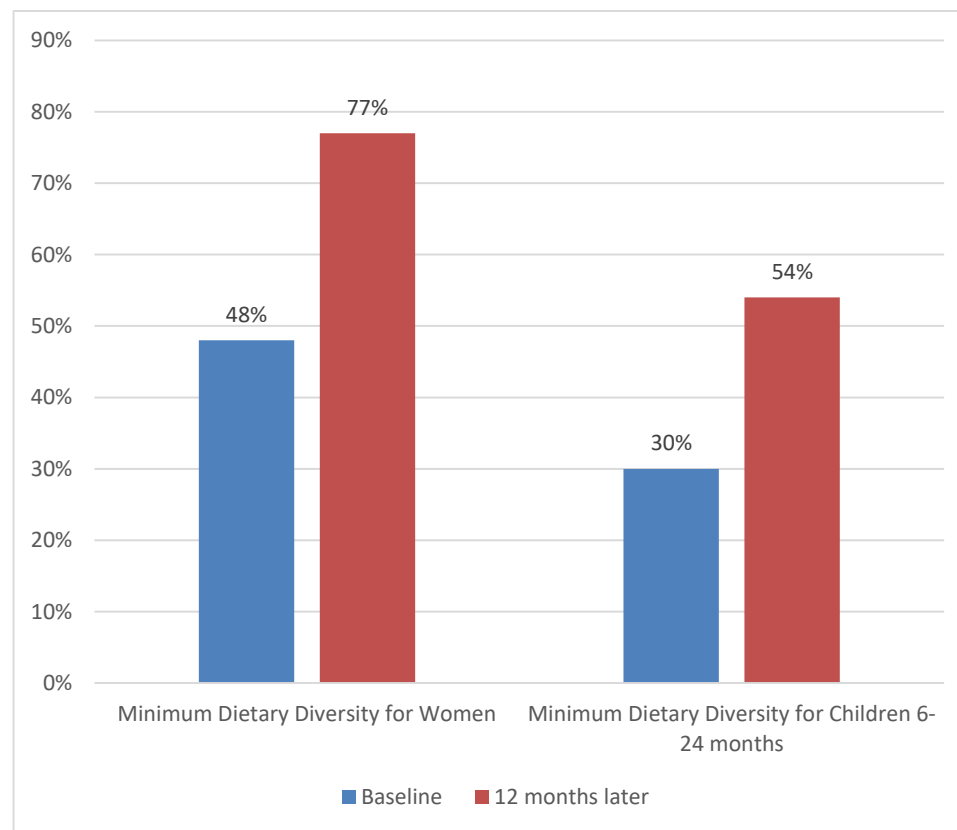
# RESULTS FROM THE EHFP PROGRAM

## Median fish harvest per month



## MDD-W and MDD for Children 6-24 months

*MDD-W (minimum dietary diversity for women)*





# RESULTS: SMALL SCALE FISH HATCHERIES



Hatchery Location	Fingerlings produced in 2016-2017 (number)	Fingerlings sold in 2016-2017 (number)	Mature fish harvested in 2016-2017 (kg)	Total sales in 2016-2017 (\$US)	Estimated profit (in \$US)
Hatchery 1 (K. Cham): Mr. Kong	485,000	250,000	150	7,875	6,300
Hatchery 2 (Kampot): Mr. Deanng ra	617,000	385,000	750	11,500	8,625
Hatchery 3 (Kampot): Mr. Tha	325,000	300,000	450	8,625	6,900
Hatchery 4 (Kampot): Mr. Samon	410,000	200,000	650	6,300	5,040
Hatchery 5 (Prey Veng): Mr. Son	270,000	210,000	200	6,350	5,080
Hatchery 6 (K. Cham): Mr. Kunthy	230,000	80,000	2,000	7,000	5,600
Hatchery 7 (K. Cham): Mr. Thoeun	300,000	230,000	200	6,250	5,000
Hatchery 8 (Prey Veng): Mr. Ly Sophal	290,000	170,000	350	5,350	4,280
Hatchery 9 (Kampot): Mr. Thoch	200,000	170,000	200	4,750	3,800
Hatchery 10 (Kampot): Mr. Kun	80,000	70,000	300	2,500	2,000

# LESSONS LEARNED



- ✓ Agriculture, aquaculture, marketing, gender, and nutrition/hygiene behavior change activities can be easily integrated, but project staff workload and household interest have been an issue;
- ✓ Migration has been a challenge to the EHFP program in Cambodia (drop out rate is 20.5%);
- ✓ Requirement of household cash contribution for production inputs has been well accepted, and has helped HKI reach the most appropriate participant households (*contribution rate reduced from 50% to 30%*);
- ✓ While fish, vegetable and fruit production has had great success so far, the delivery of poultry production encountered logistical challenges, including the quality of suppliers and mortality of chickens.
- ✓ Local fish hatcheries have proven to be very sustainable enterprises, producing and selling large number of fingerlings each year.



# THANK YOU.

*"Although the world is full of suffering, it is also full of overcoming it."*

*-Helen Keller*